PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Takumi ITO, et al.

Appln. No.: Not assigned yet

Confirmation No.: Not assigned yet

Filed: August 14, 2006

Docket No: Q96510

Group Art Unit: Not assigned yet

Examiner: Not assigned yet

For: WIRELESS   COMMUNICATION   SYSTEM,   RECEIVING   APPARATUS,
         MODULATING METHOD FOR USE THEREIN, AND PROGRAM THEREFOR

INFORMATION DISCLOSURE STATEMENT
UNDER 37 C.F.R. §§ 1.97 and 1.98

MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

        In accordance with the duty of disclosure under 37 C.F.R. § 1.56, Applicant hereby

notifies the U.S. Patent and Trademark Office of the documents which are listed on the attached

PTO/SB/08 A & B (modified) form and/or listed herein and which the Examiner may deem

material to patentability of the claims of the above-identified application.

        1. Japanese Patent Application Publication No. 2003-178048, published June 27, 2003,

along with English-Language Abstract;

        2. Japanese Patent Application Publication No. 09-219616, published August 19, 1997,

along with English-Language Abstract;

        3. Japanese Patent Application Publication No. 2001-036440, published February 9,

2001, along with English-Language Abstract;

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /KCT/

4. Hiroyuki Kawai et al. " Complexity-reduced Maximum Likelihood Detection Based on Replica Candidate Selection with QR Decomposition for MIMO Multiplex Using OFCDM" Proceedings of the 2004 IEICE General Conference, B-5-42;

5. Takumi Ito et al. " Comparison of Complexity-reduced Maximum Likelihood Detection Based on Replica Candidate Selection with QR Decomposition to Conventional Methods in OFCDM MIMO Multiplexing" Proceedings of the 2004 IEICE General Conference, B-5-43;

6. Hiroyuki Seiki et al. " Suitable Likelihood Function for Complexity-reduced Maximum Likelihood Detection Based on Replica Candidate Selection with QR Decomposition in OFCDM MIMO Multiplexing" Proceedings of the 2004 IEICE General Conference, B-5-44

7. Junichiro Kawamoto et al. "Multistage Type Complexity-reduced Maximum Likelihood Detection Based on Replica Candidate Selection with QR Decomposition Using Multipath Interference Canceller for Broadband DS-CDMA" Proceedings of the 2004 IEICE General Conference, B-5-45.

8. Shousei Yoshida et. al. "Performance of Multistage Type Complexity-reduced Maximum Likelihood Detection Based on Replica Candidate Selection with QR Decomposition Using Multipath Interference Canceller for Broadband DS-CDMA" Proceedings of the 2004 IEICE General Conference, B-5-46

9. Hiroyuki Kawai et al. "Complexity-reduced Maximum Likelihood Detection Based on Replica Candidate Selection with QR Decomposition Using Pilot-Assisted Channel Estimation and Ranking for MIMO Multiplexing Using OFCDM" IEICE Technical Report, RCS2003-312;

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /KCT/

10. Takumi Itoh et al. "Comparison of Complexity-reduced Maximum Likelihood Detection Based on Symbol Replica-Candidate Selection with QR Decomposition on Throughput and Computational Complexity in OFCDM MIMO Multiplexing" IEICE Technical Report, RCS2003-313;

11. Hiroyuki Seiki et al. "Likelihood Function for Complexity-reduced Maximum Likelihood Detection Based on Symbol Replica-Candidate Selection with QR Decomposition Suitable to Soft-Decision Turbo Decoding in OFCDM MIMO Multiplexing" IEICE Technical Report, RCS2003- 314

12. Junichiro Kawamoto et al. " Maximum Likelihood Detection Based on Replica Candidate Selection with QR Decomposition Employing Multipath Interference Canceller with two-Dimensional MMSE for Broadband DS-CDMA", IEICE Technical Report, RCS2004-27;

13. Junichiro Kawamoto et al. Accurate Path Search Method Employing Side-lobe Components Cancellation in QRM-MLD Employing Multipath Interference Canceller for Broadband DS-CDMA" IEICE Technical Report, RCS2004-56;

14. Hiroyuki Kawai et al. "Effect of Multi-Slot and Sub-Carrier Averaging Channel Estimation Filter in QRM-MLD for MIMO Multiplexing Using OFCDM" IEICE Technical Report, RCS2004-68;

15. Kenichi Higuchi "Adaptive Selection Algorithm of Surviving Symbol Replica Candidates in QRM-MLD for MIMO Multiplexing Using OFCDM Wireless Access" IEICE Technical Report, RCS2004-69;

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /KCT/

16. Hiroyuki Kawai et al. "Investigations on BLER and Throughput Performances of Adaptive Selection Algorithm of Surviving Symbol Replica Candidates in QRM-MLD for MIMO Multiplexing Using OFCDM Wireless Access" IEICE Technical Report, RCS2004-108

17. Junichiro Kawamoto et al. "Comparison of QRM-MLD Employing Multipath Interference Canceller on Throughput and Computational Complexity in Broadband DS-CDMA" IEICE Technical Report, RCS2004-110;

18. Wireless 2004 The Sixteen International Conference on Wireless Communications, Proceedings Vol. 1, pp208-214;

19. K.B. Letaief et al. "Joint Maximum Likelihood Detection and Interference Cancellation for MIMO/OFDM Systems", Vehicular Technology Conference, 2003, VTC 2003-Fall., 2003 IEEE 58th, Vol. 1, Pages 612-616, October 9, 2003

One copy of each of the listed documents is submitted herewith .

The present Information Disclosure Statement is being filed: (1) No later than three months from the application's filing date; (2) Before the mailing date of the first Office Action on the merits (whichever is later); or (3) Before the mailing date of the first Office Action after filing a request for continued examination (RCE) under §1.114, and therefore, no Statement under 37 C.F.R. § 1.97(e) or fee under 37 C.F.R. § 1.17(p) is required.

In compliance with the concise explanation requirement under 37 C.F.R. § 1.98(a)(3) for foreign language documents, Applicant states that reference 1 and 2 are cited within the specification beginning at page 4, line 8. Applicants enclose herewith a copy of and International Search Report citing reference 3 and document 19, indicating the degree of relevance found by the foreign patent office.
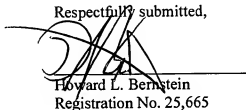
ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /KCT/

INFORMATION DISCLOSURE STATEMENT
New U.S. National Stage Entry of PCT/JP2005/002124

The submission of the listed documents is not intended as an admission that any such document constitutes prior art against the claims of the present application. Applicant does not waive any right to take any action that would be appropriate to antedate or otherwise remove any listed document as a competent reference against the claims of the present application.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

Howard L. Bernstein
Registration No. 25,665

WASHINGTON OFFICE
23373
CUSTOMER NUMBER

Date: August 14, 2006

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /KCT/

MODIFIED PTO/SB/08 A & B (08-03)

Substitute for Form 1449 A & B/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*				Application Number	Not assigned yet 589460
				Confirmation Number	Not assigned yet
				Filing Date	August 14, 2006
				First Named Inventor	Takumi ITO
				Art Unit	Not assigned → 2611
				Examiner Name	Not assigned → KHANH TRAN
Sheet	1	of	2	Attorney Docket Number	Q96510

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document
		Number	Kind Code[2] (if known)		
		US			
		US			
		US			
		US			
		US			
		US			
		US			
		US			
		US			

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Translation[6]
		Country Code[3]	Number[4]	Kind Code[5] (if known)			
/KCT/		JP	2003-178048	A	06-27-2003		
/KCT/		JP	09-219616	A	08-19-1997		
/KCT/		JP	2001-036440	A	02-09-2001		

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city, and/or country where published.	Translation[6]
/KCT/		Hiroyuki Kawai et al. " Complexity-reduced Maximum Likelihood Detection Based on Replica Candidate Selection with QR Decomposition for MIMO Multiplex Using OFCDM" Proceedings of the 2004 IEICE General Conference, B-5-42	
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1]Applicant's unique citation designation number (optional). [2]See Kind Codes of USPTO Patent Documents at www.uspto.gov, MPEP 901.04 or follow the hyperlink from the title of the document to the intranet. [3]Enter Office that issued the document, by the two-letter code (WIPO Standard ST. 3). [4]For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5]Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6]Applicant is to indicate here if English language Translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /KCT/

/KCT/	,	Hiroyuki Kawai et al. "Complexity-reduced Maximum Likelihood Detection Based on Replica Candidate Selection with QR Decomposition Using Pilot-Assisted Channel Estimation and Ranking for MIMO Multiplexing Using OFCDM" IEICE Technical Report, RCS2003-312
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/KCT/		Junichiro Kawamoto et al. " Maximum Likelihood Detection Based on Replica Candidate Selection with QR Decomposition Employing Multipath Interference Canceller with two-Dimensional MMSE for Broadband DS-CDMA", IEICE Technical Report, RCS2004-27
/KCT/		Junichiro Kawamoto et al. Accurate Path Search Method Employing Side-lobe Components Cancellation in QRM-MLD Employing Multipath Interference Canceller for Broadband DS-CDMA" IEICE Technical Report, RCS2004-56
/KCT/		Hiroyuki Kawai et al. "Effect of Multi-Slot and Sub-Carrier Averaging Channel Estimation Filter in QRM-MLD for MIMO Multiplexing Using OFCDM" IEICE Technical Report, RCS2004-68
/KCT/		Kenichi Higuchi "Adaptive Selection Algorithm of Surviving Symbol Replica Candidates in QRM-MLD for MIMO Multiplexing Using OFCDM Wireless Access" IEICE Technical Report, RCS2004-69
/KCT/		Hiroyuki Kawai et al. "Investigations on BLER and Throughput Performances of Adaptive Selection Algorithm of Surviving Symbol Replica Candidates in QRM-MLD for MIMO Multiplexing Using OFCDM Wireless Access" IEICE Technical Report, RCS2004-108
/KCT/		Junichiro Kawamoto et al. "Comparison of QRM-MLD Employing Multipath Interference Canceller on Throughput and Computational Complexity in Broadband DS-CDMA" IEICE Technical Report, RCS2004-110
/KCT/		Wireless 2004 The Sixteen International Conference on Wireless Communications, Proceedings Vol. 1, pp208-214
/KCT/		K.B. Letaief et al. "Joint Maximum Likelihood Detection and Interference Cancellation for MIMO/OFDM Systems", Vehicular Technology Conference, 2003, VTC 2003-Fall, 2003 IEEE 58th, Vol. 1, Pages 612-616, October 9, 2003

Examiner Signature	/Khanh Tran/ (04/09/2010)	Date Considered	04/09/2010

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1]Applicant's unique citation designation number (optional). [2]See Kind Codes of USPTO Patent Documents at www.uspto.gov, MPEP 901.04 or follow the hyperlink from the title of the document to the intranet. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST. 3). [4]For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5]Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6] Applicant is to indicate here if English language Translation is attached.

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